

## **II. REMARKS**

### **A. Regarding the Amendments**

Claims 1-20 are elected for examination. Claims 1, 9-12, and 19-20 have been amended. Specifically claim 1 has been amended to recite that the assay is to determine the quantity of  $\alpha$ -amylase activated by the sodium ion in proportion to the amount of the chloride ion in the sample. In addition, claim 1 has been amended to further clarify the claimed invention.

Claims 9 has been amended to replace “or” with “and” for the Markush group recitation.

Claims 10-11 and 19-20 have been amended to correct the defect in antecedent basis.

Claim 12 has been amended to recite that the claimed composition is substantially free of chloride ion and the  $\alpha$ -amylase is activated by the sodium ion in proportion to the amount of the chloride ion in the fluid sample.

No new matter is added by the amendments. Entering of the amendments is respectfully requested.

### **B. Rejections under 35 U.S.C. § 112, second paragraph**

Claims 1-11, 19 and 20 are rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant respectfully submits that claims 1-11, 19 and 20 as amended clearly overcome such rejection. Specifically claim 1 has been amended to replace the “quantity of  $\alpha$ -amylase formed” with “the quantity of  $\alpha$ -amylase activated by the sodium ion” as suggested by the Examiner. Claims 19 and 20 have been amended to delete the recitation of “compound”, thus to cure the defect in antecedent basis. Withdrawal of the rejection is respectfully requested.

### **C. Rejections under 35 U.S.C. § 102**

1. *The rejection of claims 12, 17 and 18 under 35 U.S.C. § 102(b), as allegedly being anticipated by WO 99/50444 is respectfully traversed.*

The Office Action states that WO 99/50444 in example 1 discloses a composition that anticipates the claimed composition at issue. Applicant respectfully points out that the composition disclosed in WO 99/50444 does not contain each and every element recited in the

amended claims 12, 17, and 18. Specifically claim 12 is directed to a composition useful for determining the concentration of chloride ion in a sample and it recites that “the composition is substantially free of chloride ion and wherein the  $\alpha$ -amylase is activated by the sodium ion in proportion to the amount of the chloride ion in the fluid sample.” In contrast, the composition disclosed in WO 99/50444 is directed to a composition useful for determining calcium ion concentration and it includes significant amount of chloride ion in the form of sodium chloride, e.g., 200 mM NaCl. Therefore, the composition disclosed in WO 99/50444 does not anticipate the claimed composition. Withdrawal of the rejection is respectfully requested.

*2. The rejection of claims 12-17 under 35 U.S.C. § 102(b), as allegedly being anticipated by JP 01-181799 is respectfully traversed.*

The Office Action states that JP 01-181799 discloses a composition that anticipates the claimed composition at issue. Applicant respectfully points out that the composition disclosed in JP 01-181799 does not contain each and every element recited in the amended claims 12-17. Specifically claim 12 has been amended to recite that “the composition is substantially free of chloride ion and wherein the  $\alpha$ -amylase is activated by the sodium ion in proportion to the amount of the chloride ion in the fluid sample.” In contrast, in the composition disclosed in JP 01-181799 the  $\alpha$ -amylase is activated directly by the binding of chloride ion in the sample to the inactive form of  $\alpha$ -amylase, but not by sodium ion. The sodium ion was included in the composition solely for the purpose of balancing the pH. (See abstract, under (3) of JP 01-181799). Therefore, the composition disclosed in JP 01-181799 is not comprised the same way as that of claimed invention and does not meet each and every element recited in the amended claims 12-17. Thus it does not anticipate the claimed invention at issue. Withdrawal of the rejection is respectfully requested.

#### **D. Rejections under 35 U.S.C. § 103**

*1. The rejection of claims 1-10 under 35 U.S.C. § 103(a), as allegedly being obvious over JP 01-181799 is respectfully traversed.*

The Office Action states that the method disclosed in JP 01-181799 makes the claimed invention obvious because the method includes using a composition that can be arguably included in the composition recited in the claimed method at issue. Applicant

respectfully points out that the method disclosed in JP 01-181799 does not make the claimed invention obvious because it is based on a mechanism scheme entirely different from the mechanism used in the present invention.

Specifically claim 1 as amended recites “assaying the quantity of  $\alpha$ -amylase activated by the sodium ion in proportion to the amount of the chloride ion in said sample.” As described in the specification and claims, the sodium ion concentration in the composition is higher than the concentration of chloride ion in the sample. Therefore, the concentration of chloride ion is determined based on available sodium ion binding deactivated  $\alpha$ -amylase, thus activating  $\alpha$ -amylase at a level proportional to the amount of chloride ion in the sample (page 9, lines 11-15, in the specification).

In contrast, JP 01-181799 discloses a method to determine chloride ion concentration by measuring the amount of  $\alpha$ -amylase activated by chloride ion directly binding to  $\alpha$ -amylase. JP 01-181799 does not teach or suggest using sodium ion as  $\alpha$ -amylase activator, nor does it teach or suggest using sodium ion in excess of chloride ion in the sample.

The office action seems to believe that in one of the many tested conditions, the sodium ion concentration is higher than the chloride ion concentration. Applicant respectfully points out that in the method disclosed in JP 01-181799, sodium ion is used solely for the purpose of balancing pH, not as  $\alpha$ -amylase activator. By chance, in one of the sample conditions the concentration of sodium ion may be accidentally higher than the chloride ion tested in the sample. Nevertheless JP 01-181799 clearly describes the method as measuring the amount of chloride ion by measuring the amount of  $\alpha$ -amylase activated by chloride ion directly binding to deactivated  $\alpha$ -amylase. The method described in JP 01-181799 does not suggest that sodium ion concentration should always be higher than the concentration of chloride ion in the sample. Nor does it suggest that sodium ion should be used as  $\alpha$ -amylase activator. It is a classic hindsight for the Office Action to rely on one skilled in the art to intuitively pick up an accidental fact that is not discussed and not particularly relevant to the method disclosed in JP 01-181799.

In summary, the claimed method at issue is directed to determining chloride ion concentration by measuring the amount of  $\alpha$ -amylase activated by sodium ion in proportion to the amount of chloride ion in a sample. In contrast, JP 01-181799 discloses a method of determining chloride ion concentration by measuring the amount of  $\alpha$ -amylase activated by

chloride ion binding to deactivated  $\alpha$ -amylase. Therefore, the claimed method at issue is not obvious over the disclosure by JP 01-181799. Withdrawal of the rejection is respectfully requested.

In view of the amendment and the above remarks, it is submitted that the claims are in condition for allowance and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this application.

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Respectfully submitted,

  
Nan Wu, M.D., Ph.D., J.D.

Reg. No. 43,360

Telephone: 415-836-2531

Facsimile: 415-836-2501

GRAY CARY WARE & FREIDENRICH LLP  
153 Townsend Street, Suite 800  
San Francisco, California 94107